

MOUNTING AND OPERATING INSTRUCTIONS



EB 3941 EN

Translation of original instructions



Type 3941 Solenoid Valve

Edition July 2015



Note on these mounting and operating instructions

These mounting and operating instructions assist you in mounting and operating the device safely. The instructions are binding for handling SAMSON devices.

- For the safe and proper use of these instructions, read them carefully and keep them for later reference.
- If you have any questions about these instructions, contact SAMSON's After-sales Service Department (aftersaleservice@samson.de).



The mounting and operating instructions for the devices are included in the scope of delivery. The latest documentation is available on our website at www.samson.de > **Service & Support** > **Downloads** > **Documentation**.

Definition of signal words

DANGER

Hazardous situations which, if not avoided, will result in death or serious injury

WARNING

Hazardous situations which, if not avoided, could result in death or serious injury

NOTICE

Property damage message or malfunction

Note

Additional information

Tip

Recommended action

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1 General safety instructions

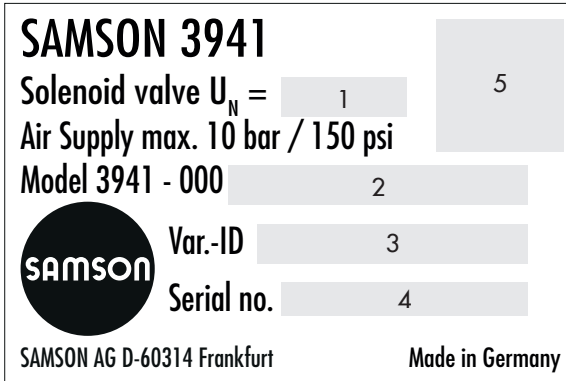
- The device is to be mounted, started up or operated only by trained and experienced personnel familiar with the product.
According to these mounting and operating instructions, trained personnel refers to individuals who are able to judge the work they are assigned to and recognize possible dangers due to their specialized training, their knowledge and experience as well as their knowledge of the applicable standards.
- The supply air must not exceed the maximum permissible supply pressure and must be limited by pressure reducing valve, if necessary.
- Proper shipping and storage are assumed.

1.1 Legal information

The Type 3941 Solenoid Valve bears a CE marking. The declaration of conformity includes information about the applied conformity assessment procedure.

2 Markings on the device

2.1 Nameplate



- 1 Nominal signal
- 2 Article code
- 3 Configuration ID
- 4 Serial number
- 5 Compliance

2.2 Article code

Solenoid valve	Type 3941- 0 0 0 x 0 x 1 0 1 0 0 0 0 0 0 0 0												
Nominal signal	24 V DC	3											
	230 V AC	5											
Manual override	Without	0											
Switching function	3/2-way function	0											
	2/2-way function	1											
Attachment	Threaded connection for wall or pipe mounting	1											
K _{vs} coefficient	0.16	0											
Pneumatic connection	G ¼		1										
Body material	Stainless steel						0						
Gasket material	NBR							0					
Electrical connection	Connector according to DIN EN 175301-803, type A, three-pole (without cable socket)								0				
Degree of protection	IP 65									0			
Permissible ambient temperature	-10 to +50 °C											0	

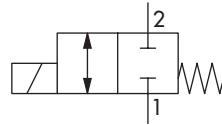
3 Design and principle of operation

The Type 3941 Solenoid Valve is suitable for industrial on/off and control applications.

The principle of operation is based on a direct-acting solenoid plunger system. When the solenoid is energized, the solenoid plunger is lifted and opens the connection from port 1 to port 2.

The Type 3941 Solenoid Valve implements 2/2-way or 3/2-way functions with K_{VS} 0.16 (see Fig. 1) depending on the version.

2/2-way function



3/2-way function

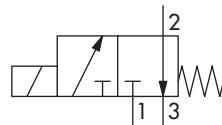


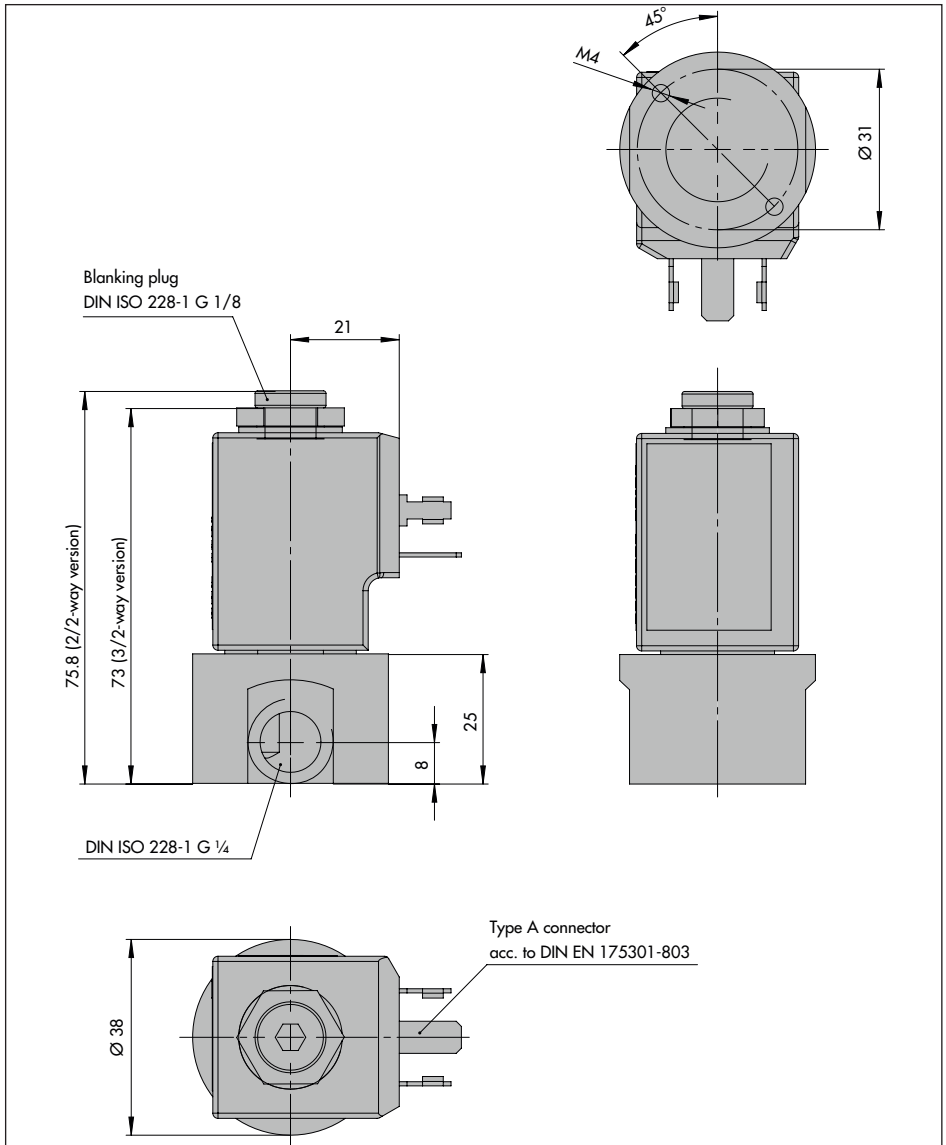
Fig. 1: *Switching functions*

3.1 Technical data

General data	
Design	Solenoid and poppet valve with return spring
Switching function	2/2 or 3/2-way function
Actuation	Directly actuated electrically on one side
Material	Body: black polyamide and stainless steel 1.4305 Internal parts: stainless steel Short-circuit ring: copper Gaskets: nitrile butadiene rubber
Degree of protection	IP 65 (with mounted cable socket)
Mounting position	Any position (preferably with the solenoid in the upright position)
Attachment	Threaded connection 1/4"
Ambient temperature	-10 to +50 °C
Approx. weight	0.42 kg
Electric data	
Nominal signal	24 V DC ($\pm 10\%$) or 230 V AC ($\pm 10\%$), 50 Hz, other nominal signals on request
Power consumption	10 W (DC), 21.5/13.5 VA (AC)
Duty cycle	100 %
Connection	Connector according to DIN EN 175301-803, type A, 3-pole
Fluid data	
Medium	Air, water or hydraulic oil (without additives)
Viscosity	22 mm ² /s
Medium temperature	-10 to +80 °C
K_{VS} ¹⁾	0.16
Output signal	Same as the operating pressure
Operating pressure	10 bar
Connection	Threaded connection G 1/4 (ports 1 and 2) and threaded connection G 1/8 (port 3)

¹⁾ The air flow rate when $p_1 = 2.4$ bar and $p_2 = 1.0$ bar is calculated using the following formula:
 $Q = K_{VS} \times 36.22$ in m³/h.

3.2 Dimensions in mm



4 Mounting and start-up

SAMSON solenoid valves are delivered ready for use. In special cases, the solenoid and valve body are delivered separately and must be assembled on site. Proceed as follows to mount and start up the solenoid valve.

4.1 Mounting position

Any mounting position may be used. The following applies concerning the installation:

- The cable entries must face downward or, in cases where this is not possible, mount them in the horizontal position.

5 Medium connection

⚠ WARNING

Risk of injury due to high pressure inside device.

Prior to performing repair and maintenance work on the device, depressurize the connecting lines.

The medium connections are designed as threaded holes with G ¼ thread.

- Run and attach the connecting lines and screw joints according to good professional practice.
- Check the connecting lines and screw joints for leaks and damage at regular intervals and repair them, if necessary.
- Protect the exhaust air connections by installing a filter or taking other appropriate precautions to prevent water or dirt from entering them.

Port labeling

Inscription	Function
1	Supply air
2	Output
3	Exhaust

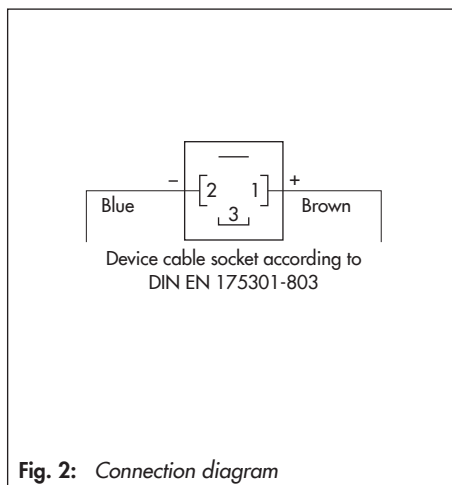
6 Electrical connection

⚠ DANGER

For electrical installation, observe the relevant electrotechnical regulations and the accident prevention regulations that apply in the country of use. In Germany, these are the VDE regulations and the accident prevention regulations of the employers' liability insurance.

The degree of protection (according to IEC 60529: 1989) is only guaranteed when the cable socket is mounted, the exhaust air filter is installed and the connections have been properly mounted.

A three-pole connector according to DIN EN 175301-803, type A, is used for electrical connection (see Fig. 2).



6.1 Sizing of the connecting line

We recommend the following size of the connecting lines:

- Wire cross-section $\geq 0.5 \text{ mm}^2$
- 8 mm outside diameter

7 Accessories

Designation	Ordering number
Blanking plug G 1/8, stainless steel (for threaded connections)	8323-0028
Seal 1/8" (for blanking plug)	8414-0136
Silencer made of polyethylene, G 1/8 connection, degree of protection IP 54	8504-0065
Cable socket according to DIN EN 175301-803, made of black polyamide, type A, three-pole, with Pg 9 cable gland and gasket of nitrile butadiene rubber	0790-6658

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